No. 23.

DID THE WORLD MAKE ITSELF.

Understand, ye brutish among the people;
And, ye fools, when will ye be wise?
He that planted the ear, shall he not hear?
He that formed the eye, shall he not see?
He that chastiseth the heathen, shall he be not correct?
He that teacheth man knowledge, shall he not know?—PSALM 94: 8, 9.

Has the Creator of the world common sense? Did he know what he was about in making it? Had he any object in view in forming it? Does he know what is going on in it? Does he care whether it answers any purpose or not? Strange questions you will say; yet we need to ask a stranger question: Had the world a creator, or did it make itself? There are persons who say it did, and with brazen-faced impudence declare that the Bible sets out with a lie when it says, that "In the beginning God created the heavens and the earth." Whereas, say they, "We know that matter is eternal, and the world is wholly composed of matter; therefore, the heavens and the earth are eternal—never had a beginning nor a creator."

But, however fully the Atheist and the Pantheist may know that matter is eternal, we do not know any such thing, and must be allowed to ask, *How do you know?* As you are not eternal, we cannot take it on your word.

The only reason which any body ever ventured for this amazing assertion is this, that "all philosophers agree that matter is indestructible by its very nature; that it can never cease to exist. You may boil water into steam, but it is all there in the steam; or burn coal into gas, ashes and tar, but it is all in the gas, ashes, and tar; you may change the outward form as much as you please, but you cannot destroy the substance of any thing. Wherefore, as matter is indestructible, it must be eternal."

Profound reasoning! Here is a brick fresh from the kiln, which will last for a thousand years to come; therefore, it has existed for a thousand years past!

The foundation of the argument is as rotten as the superstructure. It is not agreed among all philosophers that matter is, by its own nature, indestructible, for the very satisfactory reason that none of them can tell what matter in its own nature is.* All that

* It will be seen that the proof of the being of God here presented, rests upon the *impossibility* of self-existent *design* in matter.

they can undertake to say is, that they have observed certain properties of matter, and, among these, that "it is indestructible by any operations to which it can be subjected in the ordinary course of circumstances observed at the surface of the globe."* The very utmost which any man can assert in this matter is a negative, a want of knowledge or a want of power. He can say, "Human power cannot destroy matter;" and, if he pleases, he may reason thence that human power did not create it. But to assert that matter is eternal because man cannot destroy it, is as if a child should try to beat the cylinder of a steam engine to pieces, and, failing in the attempt, should say "I am sure this cylinder existed from eternity, because I am unable to destroy it."

But we are not done with the absurdities of the eternity of matter. We say to our would-be philosophers, When you tell us that matter is eternal, how does that account for the formation of this world? What is this matter you speak of? This world consists not of a philosophical abstraction called matter, nor yet of one substance known by that name, but of a great variety of material substances, oxygen, hydrogen, carbon, sulphur, iron, aluminum, and some fifty-one others already discovered.† Now, which of these is the eternal matter you speak of? Is it iron, or sulphur, or clay, or oxygen? If it is any one of them, where did the others come from? Did a mass of iron, becoming discontented with its gravity, suddenly metamorphose itself into a cloud of gas or a pail of water? Or are they all eternal? Have we fifty-seven eternal beings? Are they all eternal in their present combinations? or is it only the single elements that are eternal? You see that your hypothesis—that matter is eternal—gives me no light on the formation of this world, which is not a shapeless mass of a philosophical abstraction called matter, but a regular and beautiful building, composed of a great variety of matters. Was it so from eternity? No man who was ever in a quarry or a gravel pit will say so, much less one who has the least smattering of chemistry or geology. Do you assert the eternity of the fifty-seven single substances, either separate, or combined in some other way than we now find them in the rocks and rivers and atmosphere of the earth? Then how came they to get together at all, and particularly how did they put themselves in their present shapes?

* Reid's Chemistry, Chap. II, § 37, Chambers' Educational Course.
† Johnson's Turner's Chemistry, § 341.

Each of them is a piece of matter of which *inertia* is a primary and inseparable property. "Matter *of itself*, can not begin to move, or assume a quiescent state after being put in motion."* Will you tell us that the fifty-seven primary elements danced about till the air and sea and earth somehow jumbled themselves together into the present shape of this glorious and beautiful world, with all its regularity of day and night, and summer and winter, with all its beautiful flowers and lofty trees, with all its variety of birds and beasts, and fishes? To bring the matter down to the level of the intellect of the most stupid Pantheist, tell us, in plain English, *Did the paving-stones make themselves?*

Absurd as it seems to every man of common sense, there are persons claiming to be philosophers who not only assert that they did, but will tell you how they did it. One class of them think they have found it out by supposing every thing in the universe reduced to very fine powder, consisting of very small grains, which they call atoms; or, if that is not fine enough, into gas, of which it is supposed the particles are too fine to be perceived; and then by different arrangements of these atoms, according to the laws of attraction and electricity, the various elements of the world were made, and arranged in its present form.

Suppose we grant this uncouth supposition, that the world millions of ages ago existed as a cloud of atoms, does that bring us any nearer the object of getting rid of a creator than before? The atoms must be material if a material world is to be made from them; and they must be extended; each one of them must have length, breadth and thickness. The Pantheist, then, has only multiplied his difficulties a million times, by pounding up the world into atoms, which are only little bits of the paving stones he intends to make out of them. Each bit of the paving stone, no matter how small you break it, remains just as incapable of making itself, or moving itself, as was the whole stone composed of all these bits. So we are landed back again at the sublime question, *Did the paving stones make themselves?*

Others will tell you that millions of years ago the world existed as a vast cloud of fire mist, which, after a long time, cooled down into granite, and the granite, by dint of earthquakes, got broken up on the surface, and washed with rain into clay and soil, whence

* Reid's Chemistry; Chambers' Educational Course, p. 14, § 37.

plants sprung up of their own accord, and the plants gradually grew into animals of various kinds, and some of the animals grew into monkeys, and finally the monkeys into men. The fire mist they stoutly affirm to have existed from eternity. They do not allege that they remember that, (and yet as they themselves are, as they say, composed body and soul of this eternal fire mist, they ought to remember,) but only that there are certain comets which occasionally come within fifty or sixty millions of miles of this earth, which they suppose may be composed of the fire mist which they *suppose* this world is made of. A solid basis, truly, on which to build a world! A cloud in the sky fifty millions of miles away, may possibly be fire mist, may possibly cool down and condense into a solid globe; therefore, this fire mist is eternal, and had no need of a creator; and our world, and all other worlds may possibly have been like it; therefore, they also never were created by Almighty God. Such is the Atheists' and Pantheists' ground of faith. The thinnest vapor, or the merest supposition, will suffice to build his eternal salvation upon; provided only it contradicts the Bible, and gets rid of God. We cannot avoid asking with as much gravity as we can command, Where did the mist come from? Did the mist make itself? Where did the fire come from? Did it kindle of its own accord? Who put the fire and the mist together? Was it red hot enough from all eternity to melt granite? Then why is it any cooler now? How could an eternal red heat cool down? If it existed as a red hot fire mist from eternity, until our Pantheists began to observe it beginning to cool, why should it ever begin to cool at all, and why begin to cool just then? Fill it as full of electricity, magnetism and odyle, as you please; do these afford any *reason* for its very extraordinary conduct? The utmost they do is to show you *how* such a change took place, but they can neither tell you *where* the original matter came from, nor *why* its form was changed. Change is an effect, and every effect requires a cause. There could be no cause outside of the fire mist; for they say there was nothing else in the universe. Then the cause must be in the mist itself. Had it a mind, and a will, and a perception of propriety? Did the mist become sensible of the lightness of its behavior, and the fire resolve to cool off a little, and both consult together on the propriety of dropping their erratic blazing through infinite space, and resolve to settle down into orderly, well-behaved suns and planets? In the division of the property, what became

of the mind? Did it go to the sun, or to the moon, or to the pole star, or to this earth? Or, was it clipped up into little pieces and divided among the stars in proportion to their respective magnitudes; so that the sun may have, say the hundredth part of an idea, and the moon a faint perception of it? Did the fire mist's mind die under this cruel clipping and dissecting process; or is it of the nature of a polypus, each piece alive and growing up to perfection in its own way? Has each of the planets and fixed stars a great "soul of the world" as well as this earth, and are they looking down intelligently and compassionately on this little globe of ours? Had we not better build altars to all the host of heaven and return to the religion of our acorn-fed ancestors, who burned their children alive, in honor of the sun, on Sun-days?

An aqueous solution of the difficulty of getting rid of Almighty God, is frequently proposed. It is known that certain chemical solutions, when mixed together, deposit a sediment, or precipitate, as chemists call it. And it is supposed that the universe was all once in a state of solution, in primeval oceans, and that the mingling of the waters of these oceans caused them to deposit the various salts and earths which form the worlds in the form of mud, which afterward hardened into rock, or vegetated into trees and men. Thus, it is clearly demonstrated that there is no need for the Creator if—if—if—we only had somebody to make these primeval oceans——and somebody to mix them together!*

The development theory of the production of the human race from the mud, through the mushroom, the snail, the tortoise, the greyhound, the monkey, and the man, which is now such a favorite with Atheists and Pantheists, if it were fully proved to be a fact, would only increase the difficulty of getting rid of God. For either the primeval mud had all the germs of the future plants and monkeys, and men's bodies, and souls, in itself, originally, or it had not. If it had not, where did it get them? If it had all the life and intelligence in the universe in itself, it was a very extraordinary kind of god. We shall call it the *mud-god*. Our Pantheists, then, believe in a god of muddy body and intelligent mind. But,

*It might be supposed that such a theory is too palpably absurd to be believed by any save the inmates of a lunatic asylum, had not the writer and hundreds of the citizens of Cincinnati, seen a lecturer perform the ordinary experiment of producing colored precipitates by mixing colorless solutions, as a demonstration of the self-acting powers of matter. Common sense, being a gift of God, is righteously withdrawn from those who deny him.

if they deny intelligence to the mud, then we are back to our original difficulty, with a large appendix, viz: *The paving stones made themselves first, and all Pantheists and Atheists afterward.*

But the whole theory of development is utterly false in its first principles. From the beginning of the world to the present day, no man has ever observed an instance of spontaneous generation. There is no law of nature, whether electric, magnetic, odylic, or any other, which can produce a living plant or animal save from the germ or seed of some previous plant or animal of the same species. Nor has a single instance of the transmutation of species ever been proved. Every beast, bird, fish, insect and plant, brings forth after its kind, and has done so since its creation. No law of Natural Philosophy is more firmly established than this, *That there is no spontaneous generation nor transmutation of species.* From Cuvier down, all practical naturalists maintain this law. It is true there is a regular gradation of the various orders of animal and vegetable life, rising like the steps of a staircase, one above the other; but gradation is no more caused by transmutation than a staircase is made by an ambitious lower step changing itself into all the upper ones.

To refer the origin of the world to the laws of nature is no less absurd. Law, as Johnson defines it, is a rule of action. It necessarily requires an acting agent, an object designed in the action, means to attain it, and authoritative prescription of those means by a lawgiver. Are the laws of nature, laws given by some supposed intelligent being, worshipped by the heathen of old and the Pantheists of modern times under that name? Or do they signify the orderly and regular sequence of cause and effect, which is so manifest in the course of all events? If, as Pantheists say, the latter, this is the very thing we want them to account for. How came the world to be under law without a lawgiver? Where there is law, there must be design. Chance is utterly inconsistent with the idea of law. Where there is design, there must, of necessity, be a designer. Matter in any shape, stones or lightnings, mud or magnets, cannot think, contrive, design, give law to itself or any thing else, much less bring itself into existence. There is no conceivable way of accounting for this orderly world we live in but one or other of these two: Either an intelligent being created the world, or—*The paving stones made themselves.*

Leaving these brutish among the people—who assert the latter—to the enjoyment of their folly, let us ascertain what we can know

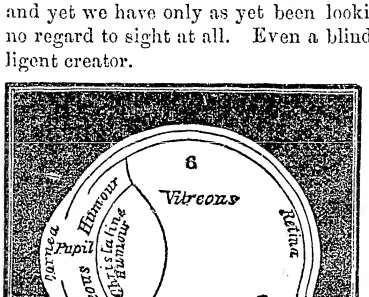
of the great Creator of the heavens and the earth. God refers the Atheists and Pantheists of the Psalmist's days to their own bodies for proof of his intelligence, to their own minds for proofs of his personality, and to their own observation of the judgments of his providence against evil doers for proofs of his moral government. Our text ascribes to him perception and intelligence: *He that planted the ear, shall he not hear? He that formed the eye, shall he not see?* It does not say, He has an eye, or an ear, but he has that knowledge we acquire by those organs. And the argument is from the designed organ to the designing maker of it, and is perfectly irresistible. A blind god could not make a seeing man. Let us look for a little at a few of the many marks of design in this organ to which God thus refers us.

We shall first observe the mechanical skill displayed in the formation of the eye, and then the optical arrangements, or rather a few of them, for there are more than eight hundred distinct contrivances already observed by anatomists in the dead eye, while the great contrivance of all, the power of seeing, is utterly beyond their ken. I hold in my hand a box made of several pieces of wood glued together, and covered on the outside with leather. Inside it is lined with cotton, and the cotton has a lining of fine white silk. You at once observe that it is intended to protect some delicate and precious article of jewelry, and that the maker of this box must have been acquainted with the strength of wood, the toughness of leather, the adhesiveness of glue, the softness and elasticity of cotton, the tenacity of silk, and the mode of spinning and weaving it, the form of the jewel to be placed in it, and the dangers against which this box would protect it—ten entirely distinct branches of knowledge, which every child who should pick up such a box in the street would unhesitatingly ascribe to its maker. Now, the box in which the eye is placed, is composed of seven bones glued together internally, and covered with skin on the outside, lined with the softest fat, enveloped in a tissue compared with which the finest silk is only canvas, and the cavity is shaped so as exactly to fit the eye, while the brow projects over like the roof of a verandah, to keep off falling dust and rain from injuring it while the lid is open; and the eyebrows, like a thatch sloping outward, conduct the sweat of the brow, by which man earns his bread, away around the outer cover, that it may not enter the eye and destroy the sight. If it were preposterous nonsense to say that

electricity, or magnetism, or odyle, contrived and made a little bracelet box, or spectacle case, how much more absurd to ascribe the making of the cavity of the eye to any such cause.

Let us next look at the shape of the eye. You observe it is nearly round in its section across, and rather oval in its other direction, and the cavity it lies in is shaped exactly to fit it. Now there are eyes in the world angular and triangular, and even square; and, as you may readily suppose, the creatures which have them cannot move them; to compensate for which inconvenience, some of them, as the common fly, have several hundred. But, unless our heads were as large as sugar hogsheads, we could not be so furnished, and we must either have movable eyes, or see only in one direction. Accordingly, the contriver of the eye has hung it with a hinge. Now there are various kinds of hinges, moving in one direction, and the maker of the eye might have made a hinge on which the eye would move up and down, or he might have given us a hinge that would bend right and left, in which case we should have been able merely to squint a little in two directions. But to enable one to see in every direction, there is only one kind of hinge that would answer the purpose—the ball and socket joint—and the Former of the eye has hung it with such a hinge, retaining it in its place partly by the projection of the bones of the face, and partly by the muscles and the optic nerve, which is about as thick as a candlewick, and as tough as leather. Most of you have seen a ship, and know the way in which the yards are moved, and turned, and squared by ropes and pulleys. The rigging of the eye, though not so large, is fully as curious. There is a tackle, called a muscle, to pull it down when you want to look down; another tackle to pull it up when you have done; one to pull to the right, and another to the left; there is one fastened to the eyeball in two places, and geared through a pulley which will make it move in any direction, as when we roll our eyes; and the sixth, fastened to the under side of the eye, keeps it steady when we do not need to move it. Then the eyelids are each provided with appropriate gearing, and need to have it durable too, for it is used thirty thousand times a day, in fact every time we wink. If God had neglected to place these little cords to pull up the eyelash, we should all have been in the condition of the unfortunate gentleman described by Dr. Nieuwentyt, who was obliged to pull up his eyelashes with his fingers whenever he wanted to see. There is, too,

another admirable piece of forethought and skill displayed by the Former of the eye, in providing a liquid to wash it, and a sponge to wipe it with, and a waste pipe, about the size of a quill, through the bone of the nose, to carry off the tears which have been used in washing and moistening the eye. Now what absurdity to say that a law of nature, say gravity, or electricity, or magnetism, has such knowledge of the principles of mechanics as the eye proclaims its Former to have—that it could make a choice among multitudes of shapes of eyes and kinds of joints, and this choice the very best for our convenience; and that having known and chosen, it could have manufactured the various parts of this complicated machine. Such a machine requires an intelligent manufacturer; and yet we have only as yet been looking at the dead eye, paying no regard to sight at all. Even a blind man's eye proves an intelligent creator.



Let us now turn our thoughts to the instrument of sight. The optic nerve is the part of the eye which conveys visions to the mind. Suppose, instead of being where you observe it, at the back part of the eye, it had been brought out to the front, and that reflections from objects had fallen directly upon it. It is obvious that it would have been exposed to injury from every floating particle of dust, and you would always have felt such a sensation as is caused by a burn or scald when the skin peels off and leaves the ends of the nerves exposed to the air. The tender points of the fibres of the optic nerve, too, would soon become blunted and broken, and the eye, of course, useless. How, then, is the nerve to be protected, and yet the sight not obstructed. If it were covered with skin, as the other nerves are, you could not see through it. For thousands of years after men had eyes and used them, they knew no substance at once hard and transparent, which could answer the double purpose of protection and vision. And, to this day, they

know none hard enough for protection, clear enough for vision, and elastic enough to resume its form after a blow. But men did the best they could, and put a round piece of brittle but transparent glass in a ring of tougher metal for the protection of the hands of a watch; and he who first invented the watch crystal thought he had made a discovery. Now observe in the eye; that forward part is the watch glass; the cornea, made of a substance at once hard, transparent, and elastic—which man has never been able to imitate—set into the sclerotica, that white, muscular coat which constitutes the white of your eye, acts as a frame for the cornea, and answers another important purpose, as we shall presently see.

But, supposing the end of the nerve protected by the glass, we might have had it brought up to the glass without any interposing lenses or humors, as, in fact, is nearly the case with some crustacea. We cannot well imagine all the inconveniences of such an eye to us. If we could see distinctly at all, we could not see much farther or wider than the breadth of the end of the nerve at once. Our sight would then be very like that faculty of perceiving colors by the points of the fingers, which some persons are said to possess. In that case, seeing would only be a nicer kind of groping, and our eyes would be more conveniently fixed on the points of our fingers; or, as with many insects, on the ends of long antennæ. Such a form of eye is precisely suited to the wants of an animal which has not an idea beyond its food, which has no business with any object too large for its mouth, and whose great concern is to stick to a rock and catch whatever animalculæ the water floats within the grasp of its feelers. But for a being whose intercourse should be with all the works of God, and whose chief end in such intercourse should be to behold the Creator reflected in his works, it was manifestly necessary to have a wider and larger range of vision; and, therefore, a different form of eye. Both these objects, breadth of field combined with length of range, are obtained by placing the optic nerve at the back of the eye, and interposing several lenses, through which objects are observed. By this arrangement a visual angle is secured, and all objects lying within it are distinctly visible at the same time. This faculty of perceiving several objects at the same time is a special property of sight which tends greatly to enlarge our conceptions of the knowledge of Him who gave it. A man who never saw can have no idea of it. He cannot taste two separate tastes at once; nor smell two distinct smells at once; nor

feel more than one object with each hand at once; and if he hears several sounds at the same time, they either flow into each other, making a harmony, or confuse him with their discord. Yet we are all conscious that we see a vast variety of distinct and separate objects at one glance of our eyes. I think it is manifest that the Former of such an eye not only intended its owner to observe such a vast variety of objects, but from the capacity of his own sight to infer the vastly wider range of vision of Him who gave it.

Besides the breadth of the field of vision, we also require length of range for the purpose of life. The thousand inconveniences which the short-sighted man so painfully feels are obvious to all. Yet it may tend to reconcile such to their lot to know that thousands of the liveliest and merriest of God's creatures cannot see an inch before them. Small birds and insects, which feed on very minute insects, need eyes like microscopes to find them; while the eagle and the fish-hawk, which soar up till they are almost out of sight, can distinctly see the hare or the herring a mile below them, and so must have eyes like telescopes. We, too, need to observe minute objects very closely, as when we read fine print, or when a lady threads a fine needle at microscope range; but, if confined to that range, we could not see our friends across the room, or find our way to the next street. Again, in traveling we need to see objects miles away, and at night we see the stars millions of miles away; but then, if confined to the long range, we should be strangers at home, and never get within a mile of any acquaintance. Now, how to combine these two powers, of seeing near objects and distant ones with the same eye, is the problem which the maker of the eye had to solve. Let us look how man tried to solve it. A magnifying lens will collect the rays from any distant object, and convey them to a point called the focus. Then suppose we put this glass in the tube of an opera-glass, or pocket spy-glass, and look through the eye-hole and the concave lens, properly adjusted, in front of it, we shall see the image of the object considerably magnified. But suppose the object draws very near, we see nothing distinctly; for the rays reflected from it, which were nearly parallel while it was at a distance, are no longer so when it comes near, but scatter in all directions, and those which fall on the lens are collected at a point much nearer to the lens than before, and the eye-glass must be pushed forward to that focus. Accordingly, you know that the spy-glass is made to slide back and forward, and the

telescope has a screw to lengthen or shorten the tube according to the distance of the objects observed. Another way of meeting the case would be by taking out the lens and putting in one of less magnifying power, a flatter lens, for the nearer object. Now, at first sight, it would seem a very inconvenient thing to have eyes drawing out and in several inches like spy-glasses, and still more inconvenient to have twenty or thirty pairs of eyes, and to need to take out our eyes and put in a new set twenty times a day. The ingenuity of man has been at work hundreds of years to discover some other method of adapting an optical instrument to long and short range, but without success. Now, the Former of the eye knew the properties of light and the properties of lenses before the first eye was made; he knew the mode of adjusting them for any distance, from the thousands of millions of miles between the eye and the star, to the half inch distance of the mote in the sunbeam; and he has not only availed himself of both the principles which opticians discovered, but has executed his work with an infinite perfection which bungling men may admire, but can never imitate. The sclerotic coat of the eye, and the choroid which lies next it, are full of muscles which, by their contraction, both press back the crystalline lens nearer the retina, and also flatten it; the vitreous humor, in which the crystalline lens lies, a fine, transparent humor, about as thick as the white of an egg, giving way behind it, and also slightly altering its form and power of refraction to suit the case. Thus, that which the astronomer, or the microscopist, performs by a tedious process, and then very imperfectly, we perform perfectly, easily, instantly, and almost involuntarily, with that perfect compound microscope and telescope invented by the Former of the human eye. Surely, in giving us an instrument so admirably fitted for observing the lofty grandeur of the heavens and the lowlier beauties of the earth, he meant to allure us to the discovery of the perfections of the great Designer and Former of all these wondrous works.

But there is another contrivance in the eye, adapted to lead us further to the consideration of the extent of the knowledge of its power. We are placed in a world of variable lights, of day and night, and of all the variations between light and darkness. We cannot see in the full blaze of light, nor yet in utter darkness. Had the eye been formed to bear only the noon-day glare, we had been half blind in the afternoon, and wholly so in the

evening. If the eye were formed so as to see at night, we had been helpless as owls in the day. But the variations of light in the atmosphere may be in some measure compensated, as we know, by regulating the quantity admitted to our houses—shutting up the windows. When we wish to regulate the admission of light to our rooms, we have recourse to various clumsy contrivances; paper blinds, perpetually tearing, sunblind rollers that will not roll, venetian blinds continually in need of mending, awnings blowing away with every storm, or shutters, which shut up and leave us in entire darkness. A self-acting window which shall expand with the opening of light in the mornings and evenings, and close up of its own accord as the light increases toward noon, has never been manufactured by man. But the Former of the eye took note of the necessities and conveniences of the case, and besides giving a pair of shutters to close up when we go to sleep, he has given the most admirable sunblinds ever invented. The nerve of the eye at the back of its chamber can not see without light, and its light comes through the little round window called the pupil, or black of the eye—which is simply a hole in the iris, or colored part. Now this iris is formed of two sets of muscles: one set of elastic rings, which, when left to themselves, contract the opening; and another set at right angles to them, like the spokes of a wheel, pulling the inner edge of the iris in all directions to the outside. In fact it is not so much a sunblind, as a self-acting window, opening and closing the aperture according to our need of light, and doing this so instantaneously that we are not sensible of the process.

It is self evident that the Maker of such an eye was acquainted with the properties of light and the alternations of night and day, as well as with the mechanical contrivances for adjusting the eye to these variable circumstances. He has given us an eye capable of seeking knowledge among partial darkness; and of availing itself for this purpose of imperfect light—an apt symbol of our mental constitution and moral situation in a world where good and evil, light and darkness, mix and alternate.

Perhaps some one is ready to ask, what is the use of so many lenses in the eye? It seems as if the crystalline lens and the optic nerve were sufficient for the purpose of sight, with the cornea simply to protect them. What is the use of the aqueous humor and the vitreous humor?

Light, when refracted through a lens, becomes separated into

its component colors—red, yellow, green, blue, and violet; and the greater the magnifying power of the lens, and the brighter the object viewed, the greater the dispersion of the rays. So that if the crystalline lens of the eye alone were used, we should see every white object bluish in the middle, and yellowish and reddish at the edges; or, in vulgar language, we should see starlight.

This difficulty perplexed Sir Isaac Newton all his life, and he never discovered the mode of making a refracting telescope which would obviate it. But M. Dolland, an optician, reflecting that the very same difficulty must have presented itself to the Maker of the eye, determined to ascertain how he had obviated it. He found that the Maker of the eye had a knowledge of the fact that different substances have different powers of refracting or bending the rays of light which pass through them, and that liquids have generally a different power of refraction from solids. For instance, if you put a straight stick in water, the part under water will seem bent at a considerable angle, while if you put the stick through a little hole in a pane of glass it will not seem near so much bent. He further discovered that oil of cassia had a different power of refraction from water, and the white of an egg still a different power. He discovered also that the first lens of the eye, the aqueous humor, is very like water—that the crystalline lens is a firm jelly—and that the vitreous humor is about the consistence of the white of an egg. The combination of these three lenses of different powers of refraction, secures the correction of their separate errors. He could not make telescope lenses of jelly, nor water; therefore, he could not make a perfect achromatic telescope, but he learned the lesson of mutual compensations of difficulties which the Maker of the eye teaches the reflecting anatomist, and procuring flint and crown glass of different degrees of refraction, he arranged them in the achromatic lens so as nearly to remedy the defect.

I think you will at once admit that Dolland's attempt to remedy the evils of confused sight in the telescope, indicated a desire to obtain a precise and correct view of objects; and that his success in constructing an instrument nearly perfect for the use of astronomers, gave evidence that he himself had a clear idea of that perfect and accurate vision which he thus attempted to bestow on them. Shall we then imagine any inaccuracy in the sight of Him, who not only desired, but executed, and bestowed on us an instru-

ment so perfectly adapted to the imperfections of this lower world, and whose very imperfections are the materials from which He produces clear and perfect vision? No! in God's eye there are no chromatic refractions of passion, or prejudice, or party feeling, or self-love. He sees by no reflected or refracted light. O Father of Light! with whom is no variableness, or shadow of turning, open our eyes to behold thee clearly!

Our text thus leads us to a knowledge of God's character, from the structure of the bodies he has given us. He that formed my eye sees. Though my feeble vision is by no means a standard or limit for his omniscience, yet I may conclude that every perfection of the power of sight He has given me, existed previously in Him. Has he endowed me, a poor puny mortal, the permanent tenant of only two yards of earth, with an eye capable of ranging over earth's broad plains and lofty mountains—of traversing her beauteous lakes and lovely rivers—of scanning her crowded cities, and inspecting all their curious productions—and specially delighting to investigate the bodily forms of men, and their mental characters displayed on the printed page? Has He given me the principle of curiosity, without which such an endowment were useless? Then most undoubtedly He has Himself both the desire to observe all the works of his hands, and the power to gratify that desire. The Former of the eye must of necessity be the great Observer.

Wheresoever an eye is found of His handy-work, and wheresoever sight is preserved by His skill, let the owner of such an instrument know that if he can see, God can, and as surely as he sees, God does.

If it is possible for us to behold many objects distinctly at once, it is not impossible for God to behold more. If He has given us an eye to look from earth to heaven, then His eye sees from heaven to earth. If I can see accurately, God's inspection is much more impartial. And if He has given me the power of adjusting my imperfect vision to the varying lights and shades of this changing scene, let me not dream for a moment that He is destitute of a corresponding power of investigating difficulties, and penetrating darknesses, and bringing to light hidden works and secret things. God is light. In Him is no darkness at all. Neither is there any creature that is not manifest in His sight, but all things are naked and opened to the eyes of Him with whom I have to do. He has seen all my past life—my faults, my follies, and my crimes

When I thought myself in darkness and privacy, God's eye was upon me there. In the turmoil of business God's eye was upon me. In the crowd of my ungodly companions God's eye was upon me. In the darkness and solitude of night God's eye was upon me. And God's eye is on me now, and will follow me from this house, and will watch me and observe all my actions, on—on—on—while God lives, and wheresoever God's creation extends.

"O God, thou hast searched and known me;
Thou knowest my down-sitting and mine up-rising;
Thou understandest my thoughts afar off.
Thou compassest my path and my lying down,
And art acquainted with all my ways.
For there is not a word in my tongue,
But, lo! O Lord, thou knowest it altogether.
Thou hast beset me behind and before, and laid thine hand upon me.
Such knowledge is too wonderful for me!
It is high, I cannot attain unto it.
Whither shall I go from thy spirit?
And whither shall I flee from thy presence?
If I ascend up into heaven, thou art there,
If I make my bed in hell, behold, thou art there!
If I take the wings of the morning,
And dwell in the uttermost parts of the sea,
Even there shall thy hand lead me,
And thy right hand shall hold me.
If I say, 'surely the darkness shall cover me,'
Even the night shall be light about me;
Yea the darkness hideth not from thee,
But the night shineth as the day;
The darkness and the light are both alike to thee."

NOTICE.

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